

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1 (currently amended): A method of production of a ~~metallic~~ steel product with a nanocrystallized surface layer,

said method of production of a ~~metallic~~ steel product with a nanocrystallized surface layer characterized by comprising:

(1) subjecting a surface layer of a ~~metallic~~ steel product to ultrasonic impact treatment impacting it by one or more ultrasonic indenters vibrating in a plurality of directions, then

(2) subjecting the surface layer subjected to the ultrasonic impact treatment to heat treatment ~~at a low temperature~~ to cause precipitation of nanocrystals.

2 (currently amended): A method of production of a ~~metallic~~ steel product with a nanocrystallized surface layer as set forth in claim 1, characterized in that the surface layer of the ~~metallic~~ steel product subjected to said ultrasonic impact treatment is in an amorphous state.

3 (currently amended): A method of production of a ~~metallic~~ steel product with a nanocrystallized surface layer as set forth in claim 1, characterized in that said ultrasonic impact treatment is accompanied with mechanical alloying.

4 (currently amended): A method of production of a ~~metallic~~ steel product with a nanocrystallized surface layer as set forth in claim 1, characterized by making an amorphous phase and a nanocrystal phase copresent in precipitation of said nanocrystals.

5 (currently amended): A method of production of a ~~metallic~~ steel product with a nanocrystallized surface layer as set forth in claim 1, characterized by shielding the surroundings at the time of said ultrasonic impact treatment from the air.

6 (currently amended): A method of production of a metallie steel product with a nanocrystallized surface layer as set forth in claim 1, characterized in that the surface layer of said metallie steel product is comprised of a ferrous metal and said surface layer is subjected to heat treatment for heating at 100 to 500°C for 15 minutes or more.